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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/767,578	01/23/2001	Ilya Trakht	55099-B/JPW/KRD	2749

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EXAMINER	
SCHWADRON, RONALD B	

ART UNIT	PAPER NUMBER
1644	

DATE MAILED: 01/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/767,578	TRAKHT, ILYA	
	Examiner	Art Unit	
	Ron Schwadron, Ph.D.	1644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 29-34 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 29-33 is/are rejected.

7)☒ Claim(s) 34 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. Claims 29-34 are under consideration.

2. It is noted that the specification defines "trioma" as a cell line formed from the fusion of three cells wherein a human-murine hybridoma is fused with a human lymphoid cell (see page 23, lines 19-24).

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 29-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oestberg et al. (US Patent 4,634,664) in view of Gustafsson et al. and Carroll et al. Applicants arguments have been considered and deemed not persuasive.

Oestberg et al. teach xenogeneic hybridoma fusion partners that do not produce antibody and the use of said cells as fusion partners to produce monoclonal antibodies upon fusion with an antibody producing cell (see column 2, last paragraph and column 3). Oestberg et al. teach that the nonantibody producing xenogeneic hybridoma fusion partner can be made by fusing a myeloma cell to a human lymphocyte (see column 2, last paragraph, continued on column 3). Oestberg et al. teach that the myeloma cell used can be a hybrid cell formed from the fusion of two cells(see column 2, last paragraph). Thus, Oestberg et al. teach use of a three cell containing xenogeneic hybridoma fusion partner that does not produce antibody and the use of said cells as fusion partners to produce monoclonal antibodies. Oestberg et al. do not teach that the cell is a trioma as per the definition of the term in the specification (eg. "trioma" as a cell line formed from the fusion of three cells wherein a human-murine hybridoma is fused with a human lymphoid cell). It is noted that the human-murine hybridoma used in the trioma as per defined in the specification could not produce antibody, because such a cell could not be used a fusion partner. Oestberg et al. teach heteromyeloma cell fusion partners (eg. mouse myeloma/human fused cells, see claim 14). Gustafsson et al. disclose that the term heteromyeloma encompasses a mouse myeloma cell fused to a

human PBL (see abstract). Said heteromyeloma would be the same as the nonantibody producing human-murine hybridoma used in the trioma as per defined in the specification. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to have produced the claimed method because Oestberg et al. teach the claimed method except for use of a trioma cell line formed from the fusion of three cells wherein a human-murine hybridoma is fused with a human lymphoid cell, Oestberg teach use of three cell nonantibody producing xenogeneic hybridoma fusion partner containing a hybrid myeloma cell and Oestberg et al. and Gustafsson et al. both teach human heteromyeloma cells (mouse human hybrid myeloma cell line). One of ordinary skill in the art would have been motivated to do the aforementioned because Oestberg et al. teach use of hybrid myelomas as the fusion partner with a nonantibody secreting human lymphocyte (see column 2, last paragraph, continued on next page) to form a three cell nonantibody secreting fusion partner and Oestberg et al. and Gustafsson et al. both teach heteromyeloma cell fusion partners (eg. mouse/human fused cells). The antibody producing hybrid cells can be used in vitro or in vivo to produce antibody (see claim 18). The cells are grown in vitro under conditions in which antibody is produced (see examples). Oestberg et al. teach freeze storage of desired antibody secreting cells (see column 7, penultimate paragraph). The various assay steps recited in claim 30 involve art known steps for immunoassays (see Examples in Oestberg et al. and Gustafsson et al.). The use of a negative control in immunoassays (eg. a sample not containing the antigen as a background control) as a basis of comparison to a positive result is well known in the art (for example see Gustafsson et al., page 28, column 1, Immunoglobulin-ELISA). The condition recited in claim 30 could be any of the art known diseases disclosed in column 4 of Oestberg et al. Carroll et al. disclose that a "heteromyeloma" encompasses a mouse myeloma/human PBL hybrid cell line (see page 62, second column, last paragraph, continued on page 63, and Table 1 wherein SBC/H20 is referred to as a heteromyeloma). Carroll et al. also use the terms "heterohybridoma" and "heteromyeloma" interchangeably (see abstract and Table 1 wherein K6H6/B5 is disclosed as a heterohybridoma in the abstract and a heteromyeloma in Table 1).

Applicant has argued that Oestberg et al. teach use of a heterohybridoma, not a heteromyeloma. However, the specification appears to define said terms as interchangeable. Regarding applicants comments about the definition of the

aformentioned terms in the specification, the specification does not specifically define the terms heteromyeloma or heterohybridoma. However, as previously noted, the specification defines "trioma" as a cell line formed from the fusion of three cells wherein a human-murine hybridoma is fused with a human lymphoid cell (see page 23, lines 19-24). The specification also discloses that, "The present invention provides a trioma cell obtained by fusing a heteromyeloma cell which does not produce any antibody with a human lymphoid cell." (page 3, lines 15-17). The only way these two statements can be reconciled is if the two terms (human-murine hybridoma (a.k.a. heterohybridoma) and heteromyeloma) are used interchangeably. **In addition, the Gustafsson et al. reference specifically teaches that a heteromyeloma is formed by fusion of mouse myeloma cells and human PBLs (see abstract*). In further addition, Carroll et al. disclose that a "heteromyeloma" encompasses a mouse myeloma/human PBL hybrid cell line (see page 62, second column, last paragraph, continued on page 63, and Table 1 wherein SBC/H20 is referred to as a heteromyeloma). Carroll et al. also use the terms "heterohybridoma" and "heteromyeloma" interchangeably (see abstract and Table 1 wherein K6H6/B5 is disclosed as a heterohybridoma in the abstract and a heteromyeloma in Table 1).***

Regarding applicants comments about Exhibit A supplied with the instant amendment, said exhibit refers to a WEB page from an unknown author with unknown credentials. The page states that it was updated by a Mr. Gillett. It does not state who the author of said WEB page was. Even if Mr. Gillett was the author, there is no evidence of record to establish that he is one of skill in the art. **However, the Carroll et al. publications and Gustafsson et al. publications are both published in peer reviewed journals by authors who are of ordinary skill in the art. The Gustafsson et al. and Carroll et al. references specifically teach that a heteromyeloma is formed by fusion of mouse myeloma cells and human PBLs.**

Regarding the cited passage of the specification, page 2, the cited passage does not disclose or define the term "heterohybridoma". It also does not specifically define what a heteromyeloma does or does not encompass (it simply refers to a specific publication (Kozbor et al.)). In addition, the Kozbor et al. publication refers to a cell line produced by **a fusion of an EBV immortalized lymphoblastoid line with a human myeloid line. This is not the cell line used by applicant in the Examples section of the**

specification. The Examples section discloses use of a mouse myeloma/human myeloma hybrid cell line. The cell line disclosed by Kozbor et al., uses two cell lines, both of which are human and one of which is not a tumor cell line (an EBV immortalized lymphoblastoid line is a not a tumor cell, it is derived from normal B cells infected with EBV in vitro). *Said cell line is not even encompassed by the definition of heteromyeloma as per Exhibit A in the instant amendment.*

Regarding applicants comments about specific examples disclosed in the specification, while said examples may disclose human myeloma/mouse myeloma hybrid cells, the term heteromyeloma is not disclosed in the specification as only encompassing such cells and the prior art clearly indicates that heteromyeloma encompasses mouse myeloma/human PBL hybrid cells. Regarding applicants comments about what the claimed invention encompasses, the prior art rejection addresses the invention as recited in the claims under consideration. The claimed invention recites use of a heteromyeloma cell, which is rendered obvious for the reasons stated above. The claims under consideration do not recite that the heteromyeloma must be formed between two tumor cells. The only functional property of the heteromyeloma recited in the claims under consideration is that it does not secrete antibody. Regarding applicants various comments about the functional properties of the cell lines disclosed in the Examples section, as per above, the instant rejection addresses the currently claimed invention recited in the claims under consideration.

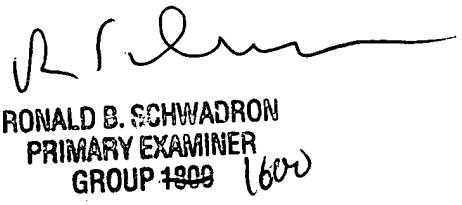
5. Claim 34 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Applicant's submission of an information disclosure statement under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p) on 12/13/2004 prompted the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 609(B)(2)(i). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ron Schwadron, Ph.D. whose telephone number is 571 272-0851. The examiner can normally be reached Monday to Thursday from 7:30am to 6:00pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Chan, can be reached at 571 272 0841. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ron Schwadron, Ph.D.
Primary Examiner
Art Unit 1644